percent absorption of same as 2-PAM versus 20 to 30 percent when orally administering 2-PAM per se.

As indicated earlier, when administering the pyridinium aldoxime compounds of this invention orally, they must be administered in the form of an enteric coated tablet as it has been determined that oral absorption occurs in the intestine. Therefore, any inert enteric coating can be employed so long as it will protect the pro-2-PAM compound of this invention from dissolution as it passes through the stomach and disintegrates in the small intestine. Normally, the enteric coating material is a cellulose lower fatty acid phthalate, particularly cellulose acetate phthalate. However, other cellulose derivatives can also be employed. For example, cellulose ethers or mixed ether esters can be substituted for the cellulose esters. Thus, among the enteric coating materials which can be used are the materials formed by reacting cellulose acetate, cellulose propionate, cellulose acetate butyrate, ethyl cellulose butylcellulose, etc., with phthalic or maleic anhydrides or the like in the presence of a tertiary organic base. The only limitation on the enteric coating is that it shall preserve the pyridinium aldoxime compounds from dissolution until they reach the small intestine and that the enteric medium be inert (non-oxidizing). Consequently, in addition to the coating enumerated above, one can use any of the conventional enteric coatings, such as shellac and others described in that portion of "REMINGTON'S PRACTICE OF PHARMACY," referred to earlier in this application.

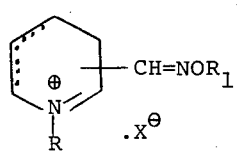
In treating the individual poisoned by an anticholinesterase blocking agent, therapeusis will be achieved, I.V. by administering about 2.5 g. to the individual initially, and then, administering one-half of that amount (1.25 g.) thereafter at 30 minute intervals until muscle strength is returned; or in the alternative, orally administering the compound of this invention in an initial dosage amount of 5.0 g. followed by the administration of the same in a dosage amount of 2.5 g. at 30 minute intervals until muscle strength return is observed.

Although the present invention has been described in great detail with reference to the specification and examples included therein, it is obviously apparent that various changes and/or modifications can be made to the same by the skilled artisan without departing from the spirit and scope thereof.

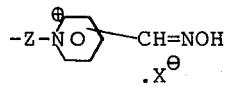
Consequently, such changes and modifications are properly, equitably and intended to be within the full range of equivalence of the following claims.

What we claim is:

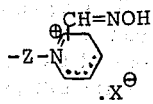
1. A pro-drug compound of the pyridine aldoxime (hydroxyiminomethyl pyridinium) type capable of reactivating blocked cholinesterase having the formula:



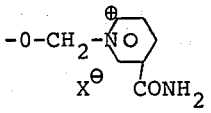
wherein R represents a member selected from the group consisting of an alkyl (C_1-C_4) group, a



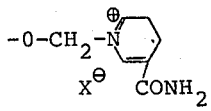
group, a



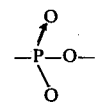
group,



group, and a



wherein Z represents a member selected from the group consisting of a $—CH_2—CH_2—$ group, a $—CH_2—O—CH_2—$ group, a $—CH_2CH_2OCH_2CH_2—$ group, and a $—CH_2O—CH_2—CH_2—O—CH_2—$ group; wherein R_1 represents a member selected from the group consisting of a hydrogen atom, a methyl group, an acyl group and a



group; and wherein X^- represents an anion derived from a pharmaceutically acceptable acid addition salt.

2. The compound of claim **1:**
1-methyl-1,6-dihydropyridine-2-aldoxime and its HX salts, wherein X represents a pharmaceutically acceptable anion.

3. The compound of claim **1:**
Trimethylene-bis-[1-(dihydropyridine-4-carbaldoxime)] and its di-HX salts, wherein X represents a pharmaceutically acceptable anion.

4. The compound of claim **3:**
Trimethylene-bis-[1-(1,4-dihydropyridine-4-carbaldoxime] and its di-HX salts, wherein X represents a pharmaceutically acceptable anion.

5. The compound of claim **3:**
Trimethylene-bis-[(1,6-dihydropyridine-4-carbaldoxime] and its di-HX salts, wherein X represents a pharmaceutically acceptable anion.

6. The compound of claim **1:**
Bis-(4-hydroxyiminomethyl-dihydropyridine-1-methyl) ether and its di-HX salts, wherein X represents a pharmaceutically acceptable anion.

7. The compound of claim **6:**
Bis-(4-hydroxyiminomethyl-1,4-dihydropyridine-1-methyl) ether and its di-HX salts, wherein X represents a pharmaceutically acceptable anion.

8. The compound of claim **6:**